UNIVERSITY OF TWENTE.

Geo-Information Sciences (GEO)

APPLICATION FOR ETHICAL REVIEW

Application nr:		**Intro form:**	8 - Introduction
Researcher:		**Middle form:**	12 - Geo-Information Sciences (GEO)
Supervisor:		**Outro form:**	5 - Submission
Reviewer:			
Status:			
Date of application:			
Application version:			

0. GENERAL

0.1. Personal details

Student/employee number:
Initials:
First name:
Last name:
Email:
Department:
Faculty:
Education:

0.2. Project title*

0.3. Summary*

Please provide a clear and concise description of your research including rationale (background), objective (aim), design and methods.

0.4. Start date (estimated) and end date (estimated) for your research project*

Start date

End date

0.5. If additional researchers (students and/or staff) will be involved in carrying out this research, please name them: [Please include full name and email]

Full name	Email

0.6. In which context will you conduct this research?

- ○ Bachelor's thesis
- ○ Master's thesis
- ○ PhD project/AIO/PDEng
- ○ Academic research conducted by a faculty member
- ○ Other

Please explain the context of research*

0.6.1. Please select your supervisor (if applicable)

0.7. Please select an ethics committee

Geo-Information Sciences (GEO)

1. SPONSORS

1.1. Does this project have any third-party sponsors other than the University of Twente?*

By third-party sponsors, we mean institutions or organizations that fund your research other than the University of Twente. If you have no such support, please write "None" in the sponsor name field.

- ○ Yes
- ○ No

1.1.1. Provide an overview of all third-party sponsors of this project.*

Sponsor name	Funding provided (in euro equivalent)	Funding purpose within the project

1.2. Do third-party sponsors in any way influence your research?*

- ○ Yes
  - Please explain how the influence constrains your independence in conducting the research and how you address this influence.
- ○ No
  - Please explain
- ○ Uncertain
  - Please explain

2. DATA COLLECTION

2.1. Will you collect (or work with) data in your project that describes real-world situations or that derive from real-world situations?*

A project may not at all be about data, or may only be using synthetic computer-generated data that has no association with real-world entities or real-world processes and might be used in simulations only.

In contrast, if your work involves primary data collection or the creation of data out of computer models that aims to be representative of real entities or processes, then your answer should be "Yes."

- ○ Yes
- ○ No

2.2. List all methods that are used for data collection in your project.*

💭 ***Select the appropriate methods and provide a concise description for each checked category.*** *Please make sure your listing and descriptions are complete (as known at the time of answering).*

By mobile sensors, we mean a wide array of hardware: those carried by drones, other airborne or spaceborne sensors, smartphones and other wearables, and animal geotrackers are all included.

- ☐ Individual interviews
  - 💭 Please explain
- ☐ Group interviews
  - 💭 Please explain
- ☐ Surveys by me or my team
  - 💭 Please explain
- ☐ Surveys by others
  - 💭 Please explain
- ☐ Real life experiments (by intervention)
  - 💭 Please explain
- ☐ Laboratory experiments
  - 💭 Please explain
- ☐ Usage of existing data sets
  - 💭 Please explain
- ☐ In situ observation by humans
  - 💭 Please explain
- ☐ In situ observation by fixed sensors
  - 💭 Please explain
- ☐ In situ observation by mobile sensors
  - 💭 Please explain
- ☐ Other
  - 💭 Please explain

2.3. Describe the dataset(s) you will collect, create, and/or use. Please provide a short name and longer description (if needed).*

List the name of each dataset you are working with in the first column, and write in the second column whether the dataset is collected, created, and/or used.

Please indicate whether your data set has a temporal dimension and aims to construct a data timeline and/or if it has a spatial dimension and aims to construct a spatial overview and its expected temporal and spatial data granularity. Leave column on space and/or time granularity empty if it is not applicable to the nature of the data. Indicate also the data set's valid date, when known, and the data set's geographic coverage, where applicable.

By data granularity, we mean what you will use as the smallest unit of information content along some data dimension. For time, it can be minutes, hours, days, months, years, etc.; and for spatial data, indicate raster resolution or vector precision.

By a data set's valid date, we mean the calendar time (period) when the data was considered truthful., e.g., "2017", "Sept-Nov, 2020", etc.

By a data set's geographic coverage, we mean a description of the spatial extent of its data elements, e.g., "Quebec province, Canada." (try to be as specific as possible).

Short name of data set	Collected, created, and/or used	Extended description of dataset	Space/Time Granularity	Valid date and geographic coverage

2.4. Describe the data collection procedure(s) that can have potential effects on people's lives.

By potential effects we mean those your research work may have on people in the sense of changing their normal activities, their cultural or socio-economic position, or introducing risks to their well-being or livelihood.

2.5. Which ethical threats can be in play during data collection?*

Please provide a reflection on potential ethical threats during data collection. In column 1, list the threats by giving each a short name that can be reused in later questions. In column 2, provide an explanation of each threat. For column 3, if applicable, specify the dataset(s) involved in each threat, making use of the list in question 2.3. Finally, in column 4, identify and describe potential mitigation measures to address each threat.

By ethical threat, we mean those issues that may be caused by sensitive questions, long interviews, or incomplete disclosure of your project intentions (causing deception or unjustified expectations). Special attention is required when the burden on the study subjects may affect their physical or well-being integrity, or their economic, emotional, or mental state.

By threat mitigation, we mean any process that can or will be used to lessen the extent of the ethical problem or consequences by isolating or containing a threat until the problem can be remedied.

Threat short name	Threat explanation	Data set(s) involved	Mitigation measure(s)

2.6. Are there any potential risks linked to how you plan to analyse your data? If so, please describe those risks and explain how you intend to mitigate them.*

2.7. Describe if you plan to apply or develop methods that enrich data from one source with data from other sources. *

If such a process is carried out, indicate a) which datasets will be enriched and in what form as part of the research process, b) identify potential ethical concerns that might arise due to such process, and c) describe the mitigation strategy.

Data enriching methods include merging/combining datasets or features of them to obtain further insights into the study topic. Suppose data enriching methods occur with data from humans. In that case, it can lead to harmful consequences for the groups or individuals (e.g., merging social media data with other sources might lead to sensitive findings).

3. ETHICAL ISSUES OF WORKING WITH HUMAN PARTICIPANTS

3.1. Does your research work, directly or indirectly, with data about humans?

- ○ Yes
- ○ No

3.2. Describe the characteristics of the individuals or groups who are the focus of your research (i.e., those from (or about who) you are collecting/using data)*

Please don't forget to specify the expected sample size and factors used to determine group membership. Also, pay attention to the vulnerability characteristics of the study subjects *-- e.g., young and old people, minorities (religious, political, sexual preference, racial), women and people with disabilities may all be more at risk than normal.*

3.3. Indicate where the study will take place, how long the data collection process will take, and how long on average any single study subject (ie, person) will be exposed to your procedure*

3.4. Will you inform your study subjects about the research, the study, the handling process of the personal data, and all the rights they are entitled to when they participate in it?*

- ○ Yes – we will inform study participants of their rights
- ○ Not certain – we have not decided yet
- ○ No – we will not inform study participants of their rights

3.4.1. How are you informing the study subjects? What is the chosen communication channel? Is it appropriate for their understanding? (Language, technology, written versus spoken, use of a trusted intermediate ...)*

Please consider that not all human participants can read leaflets (e.g., low literacy, visual impairments. It is necessary to reflect on the appropriate way to communicate (e.g., language choice, if verbal explanations are needed) when providing information about the research and asking for consent from human participants.

3.4.2. Informed consent normally means that you will also brief and debrief your study subjects, and possibly that you require to have external approval from third parties. (This can be some organization, some community lead, possibly a government agency.) Please share the third-party approvals if applicable via the upload mechanism here.

In many international development project situations, it is ill-advised to work with local people if not the governor, perhaps a ministry, the police constable and the local chief have all agreed that you engage with locals. It would be unethical, and potentially explosive, to not have this arranged.

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3.4.3. Please note that it is uncommon practice to collect, particularly personal, data without informing the people you focus on. This goes by the name of covert research and requires the provision of strong reasons to choose for this. Please describe the reasons why you will not inform the research participants or target group.*

3.5. Will you use a letter/statement of consent to ask people for their informed participation?*

- ○ Yes
- ○ No

3.5.1. Please inform us how you will communicate, seek, and document consent.*

- ○ Written Consent
- ○ Verbal Consent
- ○ Passive Consent
  - 💭 Please explain
- ○ Other
  - 💭 Please explain

3.5.2. Please upload consent letter template*

💭 *Your document should be in .pdf format. Please upload at most one file.*

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3.5.3. Provide the information documents you will use to ensure informed consent from the people who are the focus of your research.*

💭 ***Upload at least one information document.***

Your document should be in .pdf format. Please upload at most two files.

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3.5.4. Why do you think a consent letter or statement is not necessary?

3.6. Which risks have you identified regarding confidentiality of the collected data?*

Confidentiality *applies to the treatment of the data; for example, who has access to personal data, what will be done to make sure that only authorized individuals have access, and which limitations does the access procedure set? Try to provide a clear description of people that will have access to the data, of protection measures against unauthorised access, and (if applicable) to which parts of the data your measures apply.*

3.7. Will study subjects receive any reward, incentive, or payment for their participation in the study?*

If yes, describe the reward currency and indicate the amount level.

Reward *is payment in some form. This can be money, course credits (for students), food support (for poor people), a doctor referral letter for a patient, or any other "payment with items of value." If rewards are in play in your project, take some moments to reflect on whether rewards may be coercing people to collaborate unethically.*

4. DATA MANAGEMENT AND PERSONAL DATA

4.1. Will you collect (or work with) personal data in your project?*

According to the GDPR, personal data is defined as 'any information relating to an identified or identifiable natural person (the data subject). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data (home address, geo-location, etc.), an online identifier (IP-address, cookie-ID, emails), or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person.' Audio and video recordings can also be considered personal data under the GDPR if they contain identifiable information about an individual. This includes visual images of a person, such as their face and body, a person's voice, or other information that can directly or indirectly identify a person.

Please remember that even if the information contained within your dataset is not sufficient to identify an individual, this does not necessarily entail that your dataset has been anonymised. If information from other external datasets/registries can be used in conjunction with your dataset to identify an individual, then your dataset is still considered to hold personal data and, as such, is not fully anonymised. For guidance on the appropriate use of personal data in research, please visit Personal Data in Research website.

Make sure to comply with the General Data Protection Regulation (GDPR). If you process personal data in your research, you must register it through UT's GDPR registration tool. If you don't process personal data for your research but for seeking consent to ensure voluntary participation, you shouldn't obtain the participant's name or signature on the consent form. In order to be able to link the consent form to the participant, you should include the pseudonym on the consent form.

In some cases, a Data Protection Impact Assessment (DPIA) might be necessary . To help researchers identify whether a DPIA is required there is a Pre-DPIA form. For support on legal compliance while handling personal data, contact Privacy Contact Person of your faculty or UT Data Protection Officer.

For more information on this topic (including anonymization and pseudonymization), visit the GEO committee website and the BMS website.

- ○ Yes
- ○ No

4.1.1. Describe which personal data and background information is being collected about potentially identifiable natural persons.*

Please provide a bullet list of a) foreground characteristics and b) background characteristics.

By foreground information, we mean data of the kinds mentioned as potential identifiers prior; background information is data that is not one-on-one personal as in the sense above but does help to describe a person's context and (working, living, operating) environment.

4.1.2. Which data handling software will you use to store and/or analyse the personal data? On which computer system(s) will this software run, and who will have access?*

Take the notions of software and hardware in a wide sense: if your data gets analysed and/or stored in the cloud, describe the cloud service that you will use, and convince yourself and us that this service provides sufficient guarantees that fit with your project and the data you need to protect against improper use.

4.2. Can the data be re-used for later studies, and if so, does this induce further confidentiality issues or concerns?*

Essentially, later studies need to be comparable in purpose and scope, otherwise such data re-use would breach the purpose limitation clause.

4.3. Do you have any plans to make any of your research outputs (e.g., newly collected data, computer code, or findings) publicly available? If so, what are the potential ethical concerns with this and how do you intend to mitigate them?*

4.4. "I have read the ITC Research Data Management policy and the specific activities and responsibilities I have in my role"*

Please familiarize yourself with the ITC Research Data Management Policy.

Staff and PhD researchers conducting research projects need to do a Data Management Plan (DMP).

MSc students are advised to fill a (lighter) DMP version to guide them through the safe management of their research data. They can find a guidance DMP template in CANVAS, as part of their Academic Skills or Research Skills courses under the Research Data Management section.

Atlas students do not have to do a DMP but need to safely manage their data.

Further information on the research data infrastructure for collection, storage, and support can be found on the websites of LISA and DCC. For this and to get guidance on the DMP, you can contact ITC's Data Steward for further support (rdm-itc@utwente.nl).

☐ Yes

5. OTHER IMPACTS

5.1. Please choose the types of intended outputs/results of your research project.*

💬 ***Please choose all options that apply, and pick the best possible category(ies) for any planned output/result.*** *Also, provide a brief description, and include an indication of what will be novel form your output/result.*

- ☐ New hardware
  - 💬 Please explain
- ☐ New method/approach/algorithm
  - 💬 Please explain
- ☐ New system
  - 💬 Please explain
- ☐ New data
  - 💬 Please explain
- ☐ New theory/knowledge/empirical insights
  - 💬 Please explain
- ☐ New policy/laws/regulations/standards
  - 💬 Please explain
- ☐ Other
  - 💬 Please explain

5.2. Please choose the types of intended impact of your research project.*

💬 ***Please choose all options that apply, and pick the best possible category(ies) for any intended research impact.***

Please add the following information for each selected answer:
- *The output/result of your research, if used in the intended way, will bring about a positive effect. However, please describe in the "explanation field" whether and what negative effects might be possible for the intended use scenarios and indicate mitigation strategies of countermeasures that can address these negative effects.*
- *The output/result of your research may also be subject to unintended use (usually in a later stage by others). Please indicate whether it may be used in another context and which possible disadvantageous effects may arise. Describe mitigation strategies or countermeasures that can address these negative effects.*

- ☐ Cultural/social impact
  - 💬 Please explain
- ☐ Economic impact
  - 💬 Please explain
- ☐ Environmental impact
  - 💬 Please explain
- ☐ Impact on health and well-being
  - 💬 Please explain
- ☐ Other category of impact
  - 💬 Please explain

5.3. Does your project have the potential to develop by-products?*

- ○ Yes
- ○ No

5.3.1. What type of by-product(s) could be generated, and what could be their potential impact?*

💬 ***Please add the following information for each selected answer:***

• *Please provide a name, a brief description of the by-product, and whether and what negative effects or unintended uses (in later phases) might be possible. Also, state some mitigation strategies or countermeasures that can address these negative effects. If there is no potential negative effect/unintended use, please add in this field "NA".*

By-product name	Brief description	Negative Effects/Unintended Uses	Mitigation Strategies

5.4. Does your research output have the potential to be classified as a dual-use case?*

💬 *By dual-use research outputs, we mean those outputs that have the potential for both civil and military applications. Technology (and knowledge thereof) is dual-use technology when listed in the EU dual-use regulation 821/2021. If it is listed, export control may apply. The Knowledge Safety Team can assist you in applying for the license. The original motivation or intended use (e.g., humanitarian purposes, saving lives, reducing harm) is irrelevant in the legal definition of dual-use. Not complying with these requirements is a legal offense.*
The TIM Dual-Use platform will help to perform structural searches through the EU Dual-Use Control List.

- ○ Yes
  💬 Please elaborate and explain how you will prevent or mitigate undesirable consequences.
- ○ No

5.5. Could your research output be misused?*

In addition to dual-use technology, it is important to consider whether research output may be misused or may have a negative (social, environmental, health, etc) impact. While research endeavors are typically pursued for constructive purposes, certain findings or technologies may inadvertently create negative consequences for public health and safety, agriculture, animals, the environment, or national security if misapplied or exploited for malicious intent. EU guidelines on potential misuse of research will help to identify and address them.

- ○ Yes
  - Please elaborate and explain how you will minimize the risk of misuse of research.
- ○ No

5.6. Please confirm that you are aware of knowledge Safety and in case of potential concerns, you have completed the check list and contacted the responsible persons.*

The Knowledge Safety Team is responsible for safeguarding knowledge safety risks of our research, education and projects. It aims to balance between the opportunities that come with innovative research and international cooperation on the one hand, and the risks of unsafe spreading of knowledge on the other hand. In order to mitigate these risks, a platform is set up that warrants the safety of our academic knowledge. Please consult further with the Knowledge Safety Team at UT.

Please fill out the checklist for knowledge safety and export control, and consult further with the Knowledge Safety Team at UT if required.

- ☐ Yes

6. ADDITIONAL INFORMATION

6.1. Do you have any supplementary material that might be useful for the reviewing of this request?

By supplementary material, we mean all other research documentation such as interview scripts, survey questionnaires, research design protocols, etc., that might help us to understand better the context, objective and potential impact of the research.

If yes, please upload it as a combined .pdf file in the field below.

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6.2. Do you want to add anything else to this request before you are going to submit it?

- ○ Yes
- ○ No

6.2.1. Please provide us with the additional information that might be useful for handling this request.*

6.3. Have you actively engaged with significant ethical concerns throughout your research cycle (such as the implications of combining data or communicating findings to policymakers, etc.)? Note that the review process will require more iterations and, therefore, take longer if you don't reflect on significant ethical concerns.*

☐ Yes

7. CLOSURE

7.1. I have answered all questions truthful and complete*

☐ Yes

8. COMMENTS

9. CONCLUSION